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present these from Sweden, if you think them deserving your notice, which I hope you will.

I have the honour to be,

With the most perfect esteem,

S I R,

Your most obedient

humble servant,

Wargentin.

XL. *Observationes Veneris sub Sole visæ, habitæ Parisiis, die 6<sup>a</sup> Junii 1761, in palatio Luxemburgi, quas Regiæ Societati Londinensi, venerationis suæ obsequium, offert Hieronymus De la Lande, Acad. Reg. Scient. Parisinæ Socius, Regiusque Matheos Professor.*

Read Nov. 19,  
1761.

**N**ubes in oriente persistentes ab horâ quartâ usque ad septimam vitum Solis rapuerunt, earumque intervalla unicam observationem permiserunt, quæ sequitur, cum sextante hexapedali factam.

Temp.

Temp. app.

h / //

- 6 31 6 $\frac{1}{2}$  Limbus præcedens ☉ ad filum verticale.  
 6 31 43 Limbus præcedens ☿ ad filum horizontale.  
 6 31 49 $\frac{1}{2}$  Limbus præcedens ☿ ad verticale.  
 6 32 42 $\frac{1}{2}$  Limbus fequens ☉ ad horizontale.

Ex hâc obfervatione concluditur longitudo Veneris à  
 parallaxi liberata 2' 35'' ad occafum centri Solis,  
 latitudo Veneris 9' 58''.

Deinde adhibui micrometrum objectivum ex du-  
 plici vitro ad 18 pedes focum extendentibus, quocum  
 diftantias limbi utriufque Veneris à limbo Solis remo-  
 tiori dimenfus fum repetitis obfervationibus.

Temp. app.

Diftantia.

h / //

/ //

7 13 55	28 11.1	Limbus Veneris australis.
7 18 55	27 23.3	Limbus boreus.
7 21 45	28 32.1	A.
7 25 5	27 39.8	B.
7 27 50	28 42.0	A.
7 30 46	27 49.5	B.
7 37 1	28 7.3	B.
7 38 22	28 12.0	B.
7 39 40	28 15.6	B.
7 41 44	29 19.0	A.
7 44 46	29 24.1	A.
7 48 12	29 33.3	Limbus australis.
7 51 48	28 46.6	Limbus boreus.
7 53 35 $\frac{1}{2}$	29 53.4	Limbus australis.

Appropinquante exitu, ut latitudo puncti Solis, in quo Venus limbum defereret, exactius determinaretur, ad sextantem meum hexapedalem reversus sum, et frequentia observavi.

h / //

- 7 57 21 Limbus præcedens Solis ad verticale.
- 7 57 34 Limbus præcedens Veneris ad verticale.
- 7 57 57 $\frac{1}{2}$  Limbus præcedens Veneris ad horizontale.
- 7 59 16 Limbus sequens Solis ad horizontale.

Ex his differentia longitudinis 8' 21'', latitudo 10' 39'',  
horâ 7<sup>h</sup> 57' 40''.

h / //

- 8 1 37 Limbus præcedens Solis ad verticale.
- 8 1 43 $\frac{1}{2}$  Limbus Veneris præcedens ad horizontale.
- 8 1 54 $\frac{1}{2}$  Limbus sequens Veneris ad verticale.
- 8 3 3 Limbus sequens Solis ad horizontale.

Unde differentia longitudinum 8' 36'', latitudo  
10' 40'', ad 8<sup>h</sup> 1' 50''.

h / //

- 8 4 47 $\frac{1}{2}$  Limbus præcedens Solis ad verticale.
- 8 4 50 $\frac{1}{2}$  Limbus sequens Veneris ad horizontale.
- 8 4 58 $\frac{1}{2}$  Limbus præcedens Veneris ad verticale.
- 8 6 5 $\frac{1}{2}$  Limbus sequens Solis ad horizontale.

Itaque ad 8<sup>h</sup> 4' 54'', differentia longitudinum 8' 48'',  
latitudo Veneris 10' 34''.

h / //

- 8 13 1 Limbus præcedens Veneris ad horizontale.
- 8 13 8 $\frac{1}{2}$  Limbus præcedens Solis ad verticale.

Limbus

h ' "

8 13 16 Limbus præcedens Veneris ad verticale.

8 14 22 $\frac{1}{2}$  Limbus sequens Solis ad horizontale.

Ex his ad 8<sup>h</sup> 13' 8'', differentia longitudinum 9' 21'',  
latitudo 10' 52''.

His adjungere liceat, in confirmationem, quatuor determinationes habitas prope Lutetiam cum micrometro ad tubum hexapedalem composito, ab ill. Abbate De la Caille.

Temp. app. Lutet.			Diff. longit.		Latitudo.	
h	'	"	'	"	o	'
7	49	40	7	48.4	10	44 $\frac{1}{2}$
7	54	27	8	3.3	10	49 $\frac{3}{4}$
7	58	38	8	16.3	10	53
8	13	3	9	20.2	10	59 $\frac{1}{2}$

Omnes distantiae ac determinationes præcedentes ab effectu refractionis et parallaxeos (10.2'') immunes sunt, non vero ab effectu aberrationis.

Tandem observationibus aliquantulum sepositis, ut visus acies conquiesceret, cœlo sereno, tubo decem et octo pedum cum oculari 2 $\frac{1}{2}$  pollicum, aperturâ 1 pollicis, utroque planetâ exacte circumscriptis, omnibus apprime dispositis atque faventibus, exactissime contactum observavi ad 8<sup>h</sup> 28' 25'', aut 26'' ad summum; ultimum vero ad 8<sup>h</sup> 46' 54'', temp. appar. seu vero.

Quod ad primum contactum attinet, nullum dubium mihi videtur, quin ad 2'' ubique observari possit, ut celeberrimus Halley primus monuit ad summam

astronomiæ utilitatem ; postremus vero contactus  $4''$  incertitudinem forte suscipiet, nisi tubis longissimis observatus fuerit.

Ex duratione exitus diametrum Veneris colligere licet  $57''.8$  diametrum Solis liceat supponere  $31' 33''$ , ut exactissimis observationibus æstate præcedente compertus sum consentientibus (ut nuntiatum est) celeberrimi astronomorum nunc facile principis Bradleii observationibus ; parallaxim Solis  $10''.2$  adhibeo, unde correctis distantis suprà relatis, et cum distantia Veneris exeuntis comparatis, decem modis conjunctionem Veneris scrutatus sum.

Itaque, medio assumpto, statuendum mihi videtur tempus app. conjunct.  $5^h 52'$ , cum latitudine  $9' 30''$ , longitudine nodi existente  $8^s 14^{\circ} 32' 20''$  ; atque ita proxime nodum jam inveneram, collatis observationibus Parisinis cum motu nodi Veneris ab actione terræ et Jovis oriundo, quem  $20''.37$  annuatim, calculo instituto, determinavi : has autem determinaciones à Societatis Regiæ thesauro primitus oriundas, atque ipsius transitus Veneris utilitates brevi futuras ejusdem Societatis quasi beneficium, agnoscamus.